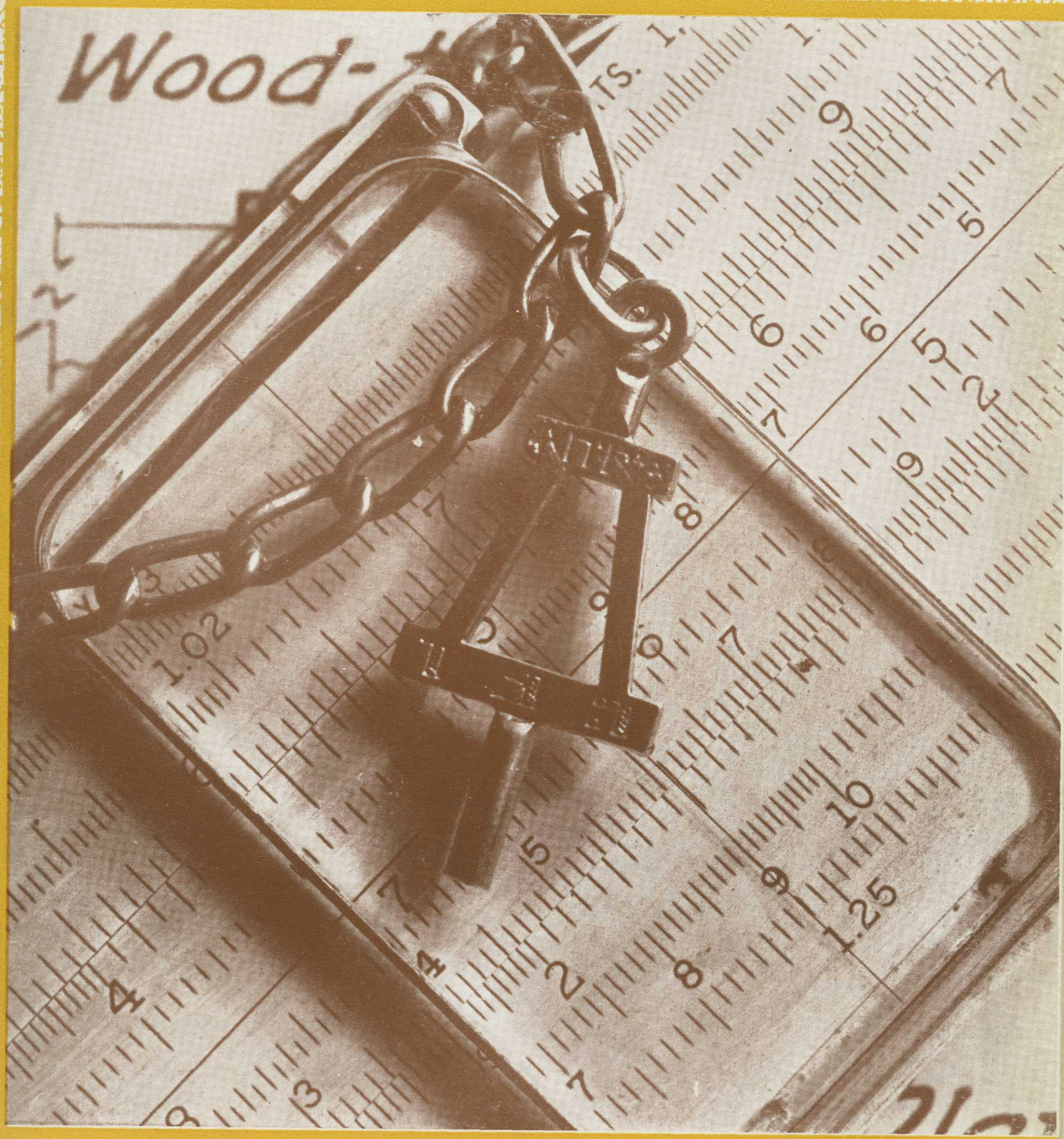
OHIO STATE ENGINEER



• FEBRUARY •

1944

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TAU BETA PI ISSUE

THE FUTURE WILL BE YOUR RESPONSIBILITY!

learn to know your Bearings NOW

American colleges turn out good engineers. That's why so many of the world's greatest engineering achievements stand to America's credit.

The world of the future will be a world of wheels and wings to an extent that cannot be completely foreseen now. But one thing is sure—it will be a world of bearings, too, for wherever wheels or shafts turn, they must turn on bearings.

It is not too much to say, in view of their present dominant position, that it will be a world of Timken Tapered Roller Bearings; for there is no bearing requirement that Timken Bearings cannot meet.

So, while you are still studying, learn to know your Timken Bearings thoroughly —their design, application and potentialities. Then you'll be still better equipped for your job when college days are over and you take up the responsibilities of a full-fledged engineer. The Timken Roller Bearing Company, Canton, Ohio.

TIMKEN

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TAPERED ROLLER BEARINGS

When the lights go on again in Grigoriopol

Three short years ago Grigoriopol was a thriving city of the Russian Ukraine. Today it is a scene of desolation . . . victim of ravaging Hitlerite hordes.

But some day—soon we hope—lights will go on again in Grigoriopol, and in other Allied cities now under the Nazi heel.

When that time comes . . . thanks to a new idea in modern warfare . . . emergency electric power will be available to revitalize industries in war torn cities—immediately after they are retaken from the enemy.

This new idea—a self-contained POWER-TRAIN—has now been made a reality by the engineering brains and skill of Westinghouse.

Ten of these POWER-TRAINS are now being built by Westinghouse for use by the United Nations . . . each a complete 5000 kw power house on wheels, big enough to serve a community of 15,000.

Each POWER-TRAIN consists of 8 cars. Ingeniously assembled in these cars are: a 5000 kw steam turbo-generator, boilers, power stokers, boiler feed pumps, air-cooled condensers, auxiliary Diesel engine, living quarters for the crew—even conveyer equipment for handling coal which will be mined locally for fuel.

Because cooling water is not always available, air-cooled condensers are used to recover, as water, a high percentage of the exhaust steam from the turbine.

From switchgear to turbo-generator, each POWER-TRAIN is a complete 5000 kw mobile power house, ready to go to work at a few hours' notice . . . *in sub-zero cold or tropical heat of the desert.*

And remember—the same Westinghouse engineering brains and skill that developed the POWER-TRAIN will be available, after Victory, to create and build better products for you.

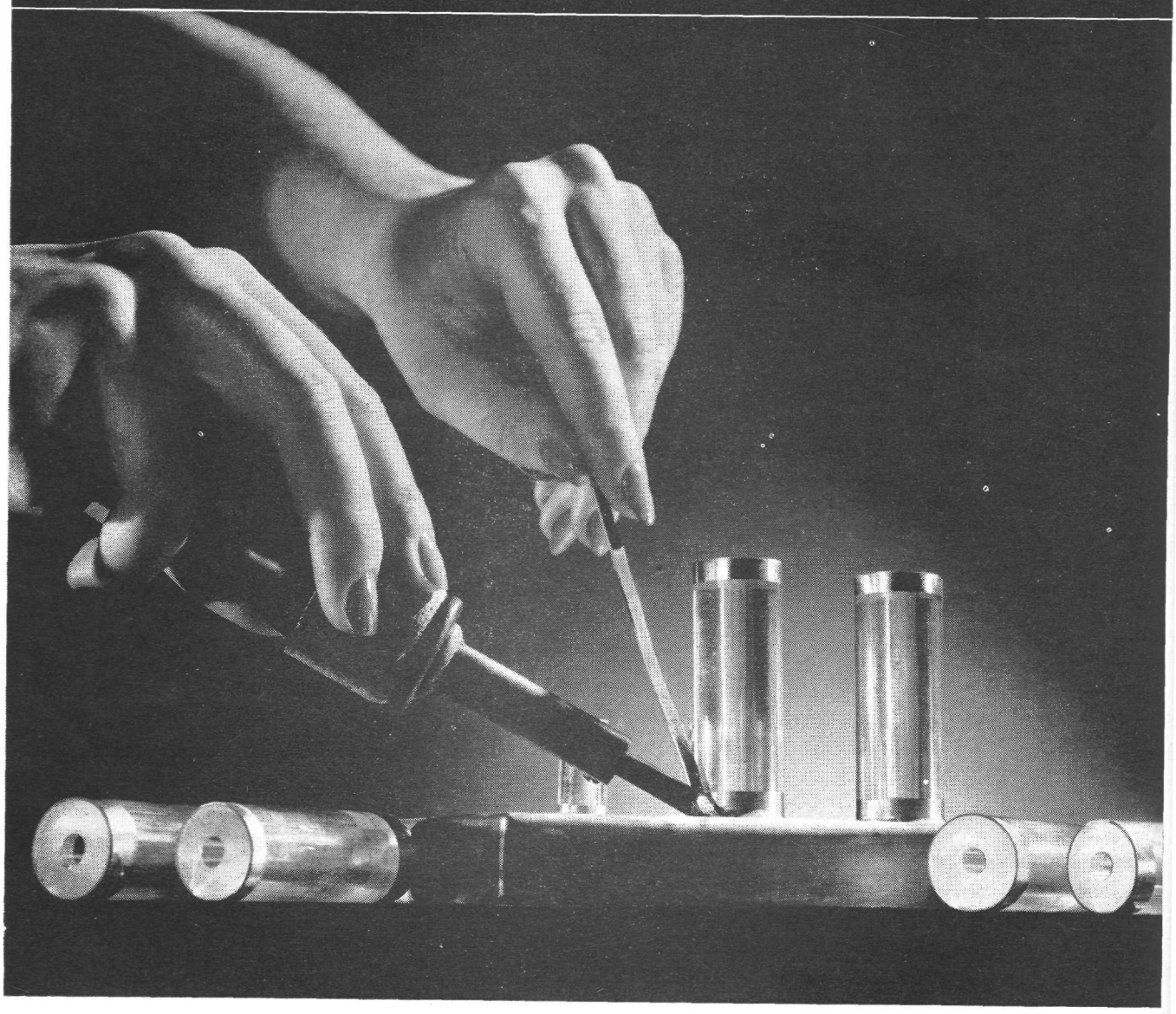
Westinghouse Electric & Manufacturing Company, Pittsburgh, Pennsylvania.

Tune in John Charles Thomas, NBC, Sundays, 2:30 p.m., E.W.T.

Westinghouse

Plants in 25 Cities Offices Everywhere

Imagine soldering metal to Glass!



HERE'S one for the book! The young lady is soldering metal to glass to make an important piece of electrical war equipment, and she doesn't have to be fussy about it either. She just solders!

The reason this can be done today is that some time ago Corning developed a method of firmly attaching a thin film of metal to glass, as a base for the solder. It was just one of many glass-metal problems that were once called "impossible."

Being ready with ideas has been the glass industry's greatest contribution to our war effort. That, and the ability to mass produce essential glass without delay.

Take Corning for instance. Here research found ways to mass produce essential optical ware. Insulators, aerial and naval navigation lenses, bulbs for electronic tubes, these and countless other war needed items are being turned out in vast quantities.

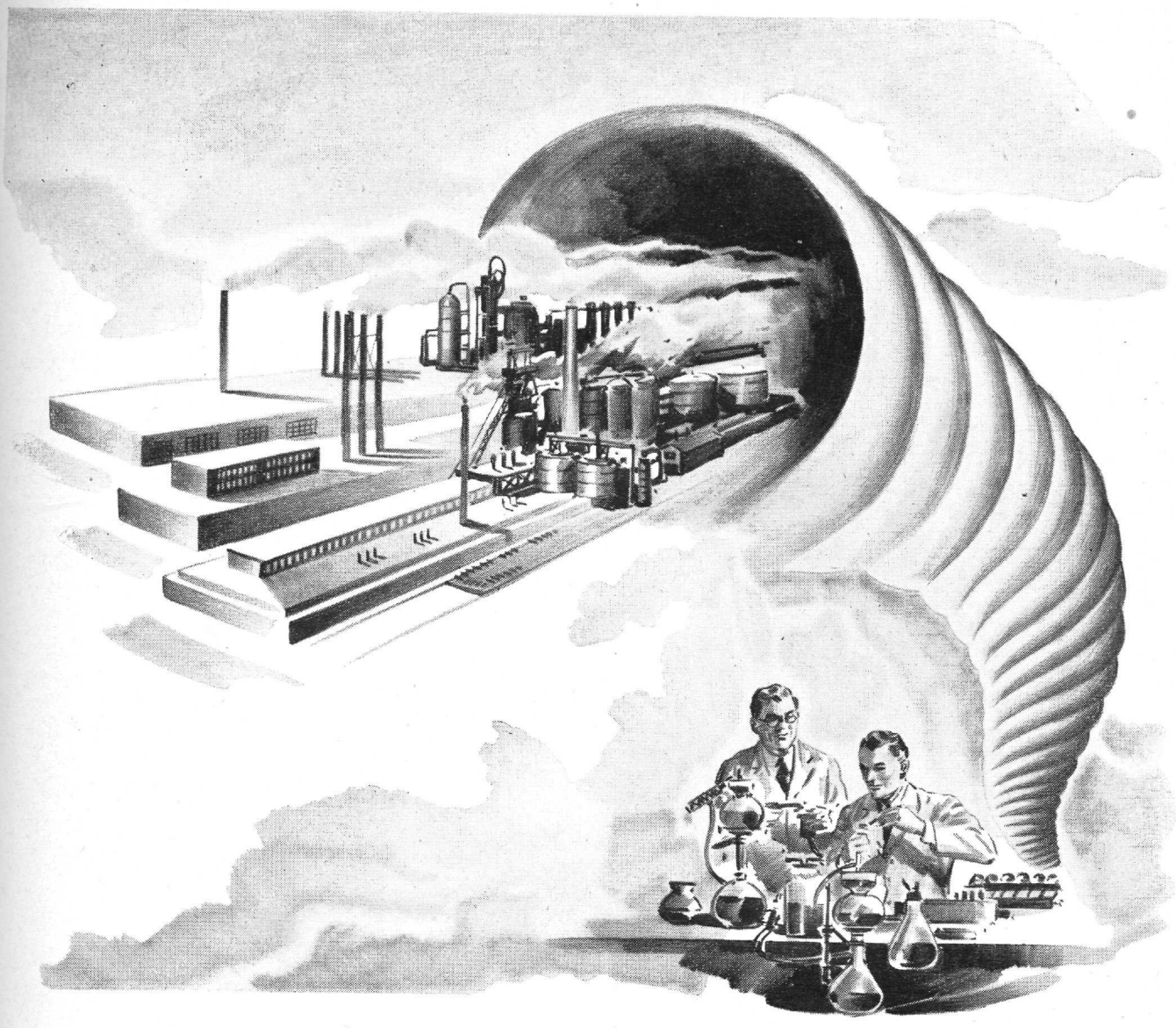
On the civilian front, Corning right now is supplying glass piping, and valves, nuts and bolts that resist chemical attack. Glass springs that apparently never wear out. Glass acid pumps that replace scarce metal alloys and give longer service in the bargain!

Glass isn't taking a back seat now, or after victory. Too many people are finding out something about its unusual qualities to ever let this happen.

They are discovering that glass is versatile. It has astounding strength. It can be shaped with great accuracy. It resists corrosion and abrasive wear. And they're finding out, too, that Corning knows glass, not only as a producer but as a developer of glass ideas.

In engineering, too, glass is a material with a brilliant future . . . In the years to come, keep your eye on glass! Corning Glass Works, Corning, N. Y.

CORNING
means
Research in Glass



Chemistry and Industrial Evolution

Industry has been free to use its own resources for new developments—to engage in research—to examine, reject or adopt new ideas. Commonplace necessities which do not lend themselves to fundamental change are improved by new production methods and the use of new materials. This freedom of action has kept industry from becoming static.

Industrial chemistry is more susceptible to this evolutionary process than perhaps any other enterprise. By developing new materials, test tubes generate fresh energy for the advancement of industry at large. From these materials, new products often evolve. There is no stronger testimony to the place of chemistry in this process than the more than 500 products produced by Dow—chemicals indispensable to Industry and Victory.

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CHEMICALS INDISPENSABLE
TO INDUSTRY AND VICTORY

The OHIO STATE ENGINEER

VOL. XXVII | February, 1944 | No. 3

Our Cover

Since this issue was edited by Tau Beta Pi, it is fitting that the engineering symbolisms, the Tau Beta Pi key and the slide rule, be used as the cover design.

Our Frontispiece

Standing the equivalent of a twenty story office building, this distillation tower is a part of the styrene producing plant built and operated at Texas City, Texas, by the Monsanto Chemical Company.

TABLE OF CONTENTS

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